

Notice of Allowability**Application No.**

10/606,105

Examiner

Lynne A. Gurley

Applicant(s)

EVANS ET AL.

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ THIS communication is responsive to the application filed 6/25/03.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All ☐ Some ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>1103</u> |
| 3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No. <u>6/25/03</u> | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David C. Ripma on 11/13/03 and 11/19/03.

The application has been amended as follows:

In claim 1, line 1, "have" has been changed to "having" after "CMOS",
before "self-aligned";
line 13, --and-- has been inserted after "desired thickness of the
oxide";
line 20, "and second" has been deleted after "first", before
"polysilicon";
line 20, "layers" has been changed to "layer" after "polysilicon";
In claim 3, line 4, "removes" has been changed to "remove", after "to",
before "the";
line 5, "are" has been changed to "regions", after "field", before
"without";
In claim 5, line 1, "have" has been changed to "having" after "CMOS",
before "self-aligned";

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line 13, --and—has been inserted after “desired thickness of the oxide”;

line 20, “and second” has been deleted after “first”, before “polysilicon”;

line 20, “layers” has been changed to “layer” after “polysilicon”;
In claim 6, line 4, “removes” has been changed to “remove”, after “to”, before “the”;

line 5, “are” has been changed to “regions”, after “field”, before “without”;

In claim 8, line 1, “have” has been changed to “having” after “CMOS”, before “self-aligned”;

line 13, --and—has been inserted after “desired thickness of the oxide”;

line 20, “and second” has been deleted after “first”, before “polysilicon”;

line 20, “layers” has been changed to “layer” after “polysilicon”;
In claim 10, line 4, “removes” has been changed to “remove”, after “to”, before “the”;

line 5, “are” has been changed to “regions”, after “field”, before “without”;

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In claim 12, line 1, "have" has been changed to "having" after "CMOS", before "self-aligned";

line 13, --and-- has been inserted after "desired thickness of the oxide";

line 17, "second" has been changed to "first", before "polysilicon layer";

In claim 14, line 3, "second" has been changed to "first", before "polysilicon layer";

line 4, "removes" has been changed to "remove", after "to", before "the";

line 4, "second" has been changed to "first", after "level of the";

line 5, "are" has been changed to "regions", after "field", before "without";

Changes to the Specification

On page 2, line 17, "10,112,014" has been changed to "10/112,014";

On page 6, line 9, "to" has been deleted, after "process", before "is";

On page 7, line 4, --the-- has been inserted, after "of", before "method";

On page 11, line 10, --, -- has been inserted, after "After etching";

Changes to the Abstract

In line 6, "and second" has been deleted after "first", before "polysilicon";

In line 6, "layers" has been changed to "layer", after "polysilicon", before "; CMP".

Notes Regarding The Amendment

The eradication of the second polysilicon layer, in the sacrificial oxide deposition step, in claim 1, line 20; in claim 5, line 20; in claim 8, line 20; and, in the abstract, line 6 is supported by the specification on page 7, lines 8-12.

The change in limitation from the second polysilicon layer to the first polysilicon layer in claim 12, line 17; and, claim 14, lines 3 and 4 is supported by the specification on page 11, lines 7-13 where there is no second polysilicon used in the alignment key embodiment.

Changes To The Drawings

The following changes to the drawings have been approved by the examiner and agreed upon by applicant: See the Form PTO-948 (attached). In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes

Reasons For Allowance

2. The following is an examiner's statement of reasons for allowance: The closest prior art of record, Evans et al. (US 6,627,510) fails to teach or to suggest, either alone or in combination, the combination of the steps of the claimed invention, including the step of: depositing a second layer of polysilicon to a thickness $T_{p2} \pm \Delta T_{p2}$, where T_{p2} is the desired thickness of the second polysilicon layer and ΔT_{p2} is the variation of the thickness of the second polysilicon layer, and wherein the top surface of the second polysilicon layer is above the top surface of the first polysilicon layer, and wherein $T_{p2} - \Delta T_{p2} + T_{ox} - \Delta T_{ox} > X_{sti} + \Delta X_{sti} + T_{p1} + \Delta T_{p1}$.

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3. The closest prior art of record, Evans et al. (US 6,627,510) also fails to teach or suggest, either alone or in combination, the combination of the steps of the claimed invention, including the steps of: depositing a sacrificial oxide layer having a thickness of at least 1.5X that of the first polysilicon layer; CMP the sacrificial oxide layer to the level of the upper surface of the first polysilicon layer; and depositing a capping polysilicon layer to form an alignment key at the edge of the trench.

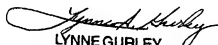
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne A. Gurley whose telephone number is 703-305-3474. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on 703-308-3325. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-308-0956.

LAG
November 19, 2003


LYNNE GURLEY
PATENT EXAMINER
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